This course uses abstract scenarios to train basic surgical skills, such as instrument navigation in the vitreous and proper OR machine settings. Trainees will also learn to visualize the vitreous through efficient use of microscope and light source. Different steps of vitreoretinal surgery will be trained separately; following abstract instrument handling tasks, trainees will practice first steps in peeling and removing membranes in a simulated surgical environment. Refines already acquired surgery skills by training multi-step vitreoretinal procedures under increasingly demanding conditions, and treatment of retinal detachment.

**Training objectives**
- Proper settings for vitrectomy fluidics, appropriate cutting rates, infusion, and aspiration levels
- Vitreotomy handpiece manipulation for effective tissue cutting and aspiration
- Use of scleral indentation for working in the periphery
- Laser probe manipulation for effective tissue adhesion with minimal burning of healthy retina
- Improved bimanual dexterity as needed in complex tasks
- Safely grasping and peeling membranes with low to moderate adherence.
- Retinal detachment procedures

**Lectures**
- Dynamics (vitrectomos) and fluidics
- Tamponade in surgical management
- Vitreous dyes and retinal structures
- Basic rules of Retinal Detachment Surgery
- Basic rules of Vitrectomy

**Surgical Simulator**
This course uses abstract scenarios to train basic surgical skills, such as instrument navigation in the vitreous and proper OR machine settings. Trainees will also learn to visualize the vitreous through efficient use of microscope and light source. Different steps of vitreoretinal surgery will be trained separately; following abstract instrument handling tasks, trainees will practice first steps in peeling and removing membranes in a simulated surgical environment. Refines already acquired surgery skills by training multi-step vitreoretinal procedures under increasingly demanding conditions, such as treatment of retinal detachment.

**Steps:**
- Navigation and instruments
- Posterior Hyaloid Detachment
- Laser Coagulation
- The Internal Limiting Membrane
- Retinal Detachment

**Wet-Lab with Artificial eyes**
- Incisions, calibers and trocars.
- Central and peripheral vitrectomy
- Endotamponadores.
- Surgical maneuvers on sclera.

**Indirect Ophthalmoscope Simulator**
- Principles
- Clinical cases

**Faculty**
- Ana Souza e Silva
- Bernardo Feijão
- Cláudia Bacalhau
- Cláudia Gonçalves
- Damião Oliveira
- Fernanda Vaz
- Filipa Simões e Silva
- Filomena Ribeiro
- Filomena Silva
- Isabel Prieto
- Joana Coceiro
- João Nascimento
- Leyra Zabala
- Mafalda Mota
- Maria Ferreira
- Nuno Amaral
- Paulo Guerra
- Paulo Kaku
- Pedro Carreira
- Peter Pégo
- Rita Dinis da Gama
- Silvia Teixeira
- Sofia Almada
- Susana Teixeira
- Tiago Bravo Ferreira

**Special participation**
- Guadalupe Cervantes
  Postgraduate Professor of Ophthalmology - Universidad Autónoma de México (UNAM)

**REGISTRATION LINKS**
- Cataract Basic Course | [https://learninghealth.up.events/e/curso-basico-catarata](https://learninghealth.up.events/e/curso-basico-catarata)
- Video Symposium on Complex Cataract Surgery | [https://learninghealth.up.events/e/videosimposio-cirurgia-da-catarata](https://learninghealth.up.events/e/videosimposio-cirurgia-da-catarata)
- Cataract Advanced Course | [https://learninghealth.up.events/e/curso-avancado-catarata](https://learninghealth.up.events/e/curso-avancado-catarata)
- Vitreoretinal Surgical Basic Course | [https://learninghealth.up.events/e/curso-basico-de-cirurgia-vitreoretiniana](https://learninghealth.up.events/e/curso-basico-de-cirurgia-vitreoretiniana)
Ophthalmic Surgical programs improve the surgical skills and the best surgical outcomes

Building surgical skills can be challenging and stressful due to a steep learning curve and high stakes for the patient. Ophthalmic Surgical programs have moved toward the integration of simulation technology to improve the surgical skills and the best surgical outcomes.

Benefits of simulation-based training include:

- Realistic, life-like simulations allows for immersive training.
- Enables rapid transfer of surgical skills.
- Standardized technique can help improve surgical outcomes.
- Enables rapid transfer of surgical skills.
- Realistic, lifelike simulations allows for immersive training.

The customized one-to-one courses will be designed in advance for each participant. Trainees complete an evaluation sheet before starting the training. A registration form is filled out beforehand, indicating the specific surgical steps to be trained, and the selected difficulty level will be selected in advance for each participant.

In this course the different stages of cataract surgery will be trained separately; following abstract instrument handling tasks, trainees will practice first steps in capsulorhexis, lens segmentation and lens removal in a simulated surgical environment.

Training objectives:

- Effective forces techniques for optimal tissue manipulation during the rhexis.
- Deeper understanding of appropriate vector forces for the rhexis.
- Effective bimanual movements for phaco chopping.
- Optimizing the fluidics of the phaco probe during each step of cataract surgery.
- Efficient sculpting for divide and conquer technique.
- Dynamic bimanual movements needed for nucleus cracking Safe aspiration of cortex during irrigation and aspiration coaxial and bimanual.
- Correct IOL implant.

Lectures:

- Phaco Fluidics for Dummies
- Pearls for Capsulorhexis and Hydromaneuvers
- Pearls for Craking & Chopping
- Recognize Alert Signals
- My Tips and Tricks for cataract surgery

Surgical Simulator:

Steps:

- Navigation and instruments
- Capsulorhexis
- Hydromaneuvers
- Step and Chop
- IOL implant

Wet-lab with Artificial eyes:

- Corneal incisions
- Capsulorhexis
- Phacoemulsification
- IOL implant

Phaco Fluidics:

- Principles
- Balance, collapse and power test

Indirect Ophthalmoscope Simulator:

- Principles
- Clinical cases

This course offers training of complex cataract surgery cases under demanding conditions, such as increasing capsule tensions and weak zonules and complications. In the course trainees will be challenged by tasks and complications, requiring them to quickly adapt to the surgical scenario.

Training objectives:

- Techniques for optimal manipulation during the rhexis errant tear.
- Optimizing the fluidics of the phaco probe during each step of cataract surgery.
- Dynamic bimanual movements needed for nucleus chop.
- Dealing with pupil issues.
- Dealing with weak zonulas.
- Dealing with Intumescent cataract.
- Correct insertion of a Toric IOL.
- Anterior Vitrectomy.

Lectures:

- Video Symposium on complex cataract surgery.
- Presentation and discussion of cases of complex cataract.

My Tips and Tricks for complex cataract surgery.

Surgical Simulator:

This course offers training of complex cataract surgery cases under demanding conditions, such as increasing capsule tensions and weak zonules and complications. In the course trainees will be challenged by randomized tasks and complications, requiring them to quickly adapt to the surgical scenario.

Steps:

- Capsulorhexis errant tear and capsular plaques.
- Horizontal and vertical Chop.
- Mayugin ring insertion and removal.
- Weak zonules and capsules.
- Intumescent Cataract.
- Anterior Vitrectomy.
- Implantation and alignment of a Toric IOL.

Wet-lab with Artificial Eyes:

- Dye-Enhanced anterior capsulorhexis.
- Iris retractors.
- Zonular Instability.
- Anterior vitrectomy.
- Implant and explant IOls.

Phaco Fluidics:

- Principles.
- Balance, collapse and power test.

Indirect Ophthalmoscope Simulator:

- Principles.
- Clinical cases.